

IN THE CLAIMS

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This is a complete and current listing of the claims, marked with status identifiers in parentheses. The following listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A method for imaging examination of an examination object, ~~in particular a patient (P), in which~~ comprising:

a) ~~the examination object is administered~~ ing a contrast agent to the examination object ~~(KM),;~~

b) ~~thereafter determining,~~ at least two spatial distributions ~~$(\mu_1(x,y), \mu_2(x,y))$ of X-ray attenuation values are determined, which the X-ray attenuation values in each case represent~~ representing at least one of a the local X-ray attenuation coefficient and $(\mu(x,y))$, ~~or a variable (C) linearly dependent thereon,~~ the two spatial distributions ~~$(\mu_1(x,y), \mu_2(x,y))$ comprising~~ including at least ;

~~_____ a first attenuation value distribution $(\mu_1(x,y))$ determined on the basis of a first X-ray spectrum,~~

~~_____ a second attenuation value distribution $(\mu_2(x,y))$ determined on the basis of a second X-ray spectrum, differing from the first X-ray spectrum;~~

e) ~~evaluating two the at least two attenuation value distributions $(\mu_1(x,y), \mu_2(x,y))$ are evaluated and determining at least one of a spatial distribution of one or more predefined atomic number values (Z, Z_1, Z_2, \dots) or and a spatial distribution $(Z(x,y))$ of non-predefined atomic number values present in the examination object is determined, which the spatial distribution includes~~ including information relating to

the distribution of the administered contrast agent ~~(KM)~~
in the examination object, ~~;~~ and

d) ~~—~~ using the spatial atomic number distribution
~~(Z(x,y)) is used to represent the contrast agent (KM) by~~
imaging.

2. (Currently Amended) The method as claimed in claim 1, ~~in~~
~~which~~ wherein an atomic number value of the contrast agent ~~(KM)~~
is predefined.

3. (Currently Amended) The method as claimed in claim 1,
~~in which~~ wherein the spatial atomic number distribution is
determined as a two- or three-dimensional field, the respect
field value being a local atomic number value ~~(Z(x,y))~~ at the
location ~~(x,y)~~ represented by the relevant field.

4. (Currently Amended) The method as claimed in claim 3,
~~in which~~ wherein, in addition to the atomic number
distribution, a further two- or three-dimensional field is
determined whose field values respectively reproduce a local
density value ~~(p(x,y))~~.

5. (Currently Amended) The method as claimed in claim 4,
wherein
~~in which~~ the determined field having the atomic number values
~~(Z(x,y))~~ and the determined field having the density values
~~(p(x,y))~~ are used for the purpose of calculating a local
concentration or a local quantity of the contrast agent.

6. (Currently Amended) The method as claimed ~~in one of~~
~~claims claim 1 to 5,~~ wherein
~~in which~~ a contrast agent ~~(KM)~~ having an atomic number greater
than 20 is used.

7. (Currently Amended) The method as claimed in claim 6,
wherein

~~in which~~ a contrast agent ~~(KM)~~ having an atomic number greater than 40 is used.

8. (Currently Amended) The method as claimed in ~~one of~~ ~~claims 1 to 7,~~ claim 1, wherein ~~in which~~ a contrast agent ~~(KM)~~ having an atomic number less than 83, ~~in particular less than 70,~~ is used.

9. (Currently Amended) The method as claimed in ~~one of~~ ~~claims 1 to 8,~~ claim 1, wherein ~~in which~~ the contrast agent ~~(KM)~~ contains at least one of gadolinium, iodine, ytterbium, dysprosium, iron and ~~or~~ bismuth.

10. (Currently Amended) The method as claimed in ~~one of~~ ~~claims 1 to 9,~~ claim 1, wherein ~~in which~~ the contrast agent ~~(KM)~~ contains an organic compound, ~~in particular an aliphatic hydrocarbon, for example sugar.~~

11. (Currently Amended) The method as claimed in ~~one of~~ ~~claims 1 to 10,~~ claim 1, wherein the contrast agent ~~(KM)~~ contains at least one of an amino acid ~~or~~ and a peptide.

12. (Currently Amended) The method as claimed in ~~one of~~ ~~claims 1 to 11,~~ claim 1, wherein the contrast agent ~~(KM)~~ is designed for selective deposition ~~at~~ at least one of at specific sites and ~~or~~ in specific tissue parts of the examination object.

13. (Currently Amended) The method as claimed in ~~one of~~ ~~claims 1 to 12,~~ claim 1, wherein the contrast agent ~~(KM)~~ is added in a weight concentration from the range of 10^{-4} to 10^{-7} , ~~in particular from the range of 10^{-5} to 10^{-6} .~~

14. (Currently Amended) The method as claimed in ~~one of~~
~~claims 1 to 13,~~
~~in which~~claim 1, wherein a first functional dependence ~~(11)~~ of
a first attenuation value of the first attenuation value
distribution of density and atomic number, and at least a
second functional dependence ~~(41)~~ of a second attenuation
value, assigned to the first attenuation value, of the second
attenuation value distribution of density and atomic number
are determined,
and ~~in which~~wherein the spatial atomic number distribution -
~~and optionally a spatial density distribution~~ is/are
determined by comparing the first functional dependence ~~(11)~~
with the second functional dependence ~~(41)~~ and, if
appropriate, with further functional dependences.

15. (New) The method as claimed in claim 1, wherein a
contrast agent having an atomic number less than 70 is used.

16. (New) The method as claimed in claim 1, wherein the
contrast agent contains an aliphatic hydrocarbon.

17. (New) The method as claimed in claim 1, wherein the
contrast agent is added in a weight concentration from the
range of 10^{-5} to 10^{-6} .

18. (New) The method as claimed in claim 1, wherein a
first functional dependence of a first attenuation value of
the first attenuation value distribution of density and atomic
number, and at least a second functional dependence of a
second attenuation value, assigned to the first attenuation
value, of the second attenuation value distribution of density
and atomic number are determined, and wherein the spatial
atomic number distribution and a spatial density distribution
are determined by comparing the first functional dependence
with the second functional dependence and, if appropriate,
with further functional dependences.